

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0	7	T	N	S	N	P	1	2	0	0	-	0	0	0	0	0	-	0	0	3	4	1	1	1	1	4			5	
7	8	LICENSEE CODE						14	LICENSE NUMBER												25	LICENSE TYPE					30	57 CAT 56		

CON'T

01 2 8
REPORT SOURCE L 6 0 5 1 0 0 0 3 2 7 7 1 1 0 5 8 2 8 0 3 3 1 0 1 8 3 9
60 61 DOCKET NUMBER 68 69 EVENT DATE 74 75 REPORT DATE 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 | With unit 1 in mode 6 (refueling) at 0900 CST on 11/05/82, it was found that the

03 | check valve (1-623) downstream of the main steam isolation valve (MSIV) had failed.

04 | This required entry into the action for LCO 3.0.3. There was no effect upon

05 | public health and safety. Previous occurrences - none.

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0	8	
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7 8 9

0 9

7 8

SYSTEM CODE

C D (11)

9 10

CAUSE CODE

E (12)

11

CAUSE SUBCODE

B (13)

12

COMPONENT CODE

V A L V E X (14)

13 14 15 16 17 18

COMP. SUBCODE

C (15)

19

VALVE SUBCODE

A (16)

20

(17) LER/RO REPORT NUMBER EVENT YEAR
8 2
21 22
—
23

SEQUENTIAL REPORT NO. 1 2 6
24 25 26
/
27

OCCURRENCE CODE 0 1
28 29

REPORT TYPE T
30
—
31

REVISION NO. 1
32

ACTION TAKEN		FUTURE ACTION		EFFECT ON PLANT		SHUTDOWN METHOD		HOURS				ATTACHMENT SUBMITTED		NPRD-4 FORM SUB.		PRIME COMP. SUPPLIER		COMPONENT MANUFACTURE		
B	18	X	19	Z	20	Z	21	0	0	0	0	Y	23	N	24	L	25	A	5	8
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 | During a walkdown of the mainstream supply header, it was discovered that the check

valve (1-623) disc had separated from the stem and lodged downstream in the steam

1 2 | dump header. The disc was retrieved. An inspection was made of the other unit 1

check valves and valve (1-624) was also found defective. The disc post was replaced

1.4 | and the valve returned to service prior to startup of the units.

8 9
FAMILY STATUS (28) 1 5 G
% POWER 0 0 0 (29)
OTHER STATUS (30) NA
METHOD OF DISCOVERY (31) B
DISCOVERY DESCRIPTION (32) Operator observation

ACTIVITY CONTENT
RELEASED OF RELEASE

1 6 2 33 4 34 NA

AMOUNT OF ACTIVITY (35)

NA

LOCATION OF RELEASE (36)

PERSONNEL EXPOSURES									
NUMBER			TYPE	DESCRIPTION					
1	2	0	0	0	37	Z	38	NA	39

PERSONNEL INJURIES		NUMBER		DESCRIPTION	
1	8	0	0	0	NA

TYPE DESCRIPTION (43)
 9 Z (42) NA
 8 9 10
 PUBLICITY (44) B304070430 B30430

ISSUED DESCRIPTION (45) 884070420 830330 NAC USE ONLY
7 0 N (44) NA PDR ADOCK 05000327
8 9 10 S PDR
Name of Preparer: H. R. Rogers / M. R. Harding
Phone: (615) 751-0349

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LER SUPPLEMENTAL INFORMATION

SQRO-50-327/82126, Revision 1 Technical Specification Involved: 6.9.1.12.i

Reported Under Technical Specification: 6.9.1.12.i

Date of Occurrence: 11/05/82 Time of Occurrence: 0900 CST

Identification and Description of Occurrence:

On 11/05/82 during a walkdown of the mainsteam supply header and valves, it was discovered that the unit 1 loop 1 check valve (1-623) downstream of the main steam isolation valve (MSIV) had failed in that the disc had separated from the stem. In the event of a main steam line break and the failure of an MSIV to close, this could result in more than one steam generator blowing down into containment. The unit complied with actions in LCO 3.0.3.

This failure has been evaluated as reportable under 10 CFR 21 and this report provides the necessary part 21 information. There are a total of eight similar valves manufactured by Atwood Morrill in use at SQN and these are located in the main steam supply headers loops 1, 2, 3, and 4 in both units 1 and 2.

Conditions Prior to Occurrence:

Unit 1 in mode 6 (refueling).

Apparent Cause of Occurrence:

Investigation revealed that the check valve disc had separated from the valve stem and lodged downstream in the steam dump header. An evaluation of the failed components revealed that the failure most probably resulted from the check valve counter weights sliding down the swing arms. This allowed the valve disc to oscillate against the disc stop during system operations causing fatigue failure.

Analysis of Occurrence:

The disc to stem connector stud (disc post) was found to be broken in check valve (1-623). An analysis of the failed parts has identified this as cyclic fatigue failure of the disc post. A contributing factor to the stud failure was inadequate torquing during stud installation. The presence of fatigue failure at the end of the pin beyond the threaded connection indicates that the pin was not properly torqued and the proper preload not established on the threads during installation. A properly loaded threaded connection will distribute the load over the first few threads and the shoulder. In the case of the failed components, the threads were not bearing the load and the seal weld area was forced to accept the load when the disc would seat or return to the stop. The load was concentrated at the base of seal weld, and the pin failed at the nearest stress riser--the root of the thread.

Dye penetrant and ultrasonic tests were made on the check valves in the remaining loops on unit 1. A crack was found in the disc post on the unit 1 loop 2 check valve (1-624). Analysis has determined this to be a similar failure to the loop 1 valve. There were no indications of failures or problems with the other two unit 1 valves. Similar inspections have also been made on the check valves for unit 2 and no problems have been found.

Corrective Action:

Modifications have been made on the swing arms and counter weight to significantly reduce the disc oscillating against the disc stop. Similar changes have been made on both units 1 and 2 check valves.

The disc to stem connector stud was replaced in valves 1-623 on loop 1 and 1-624 on loop 2. Precautions were taken to ensure proper installation and torquing of the stud. The valves will be reinspected to ensure that no further problem exists. This will be done by the startup of the next regularly scheduled refueling outage.

Failure Data:

None.